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In The United States Patent and Trademark Office

Appn. No.:	10/696,863
Appn. Filed:	10/30/2003
Applicant:	Mark Zamoyski
Title:	Inhalable Chemical Debridement for COPD
Examiner:	Rebecca Cook
GAU:	1614

San Jose, CA July 26, 2005

Amendment A

Mail Stop Non-Fee Amendments
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In response to the Office Letter mailed June 28, 2005:

In response to the statement "An attempt to reach the attorney was made on July 23, 2005 to request an oral election to the above election requirement, but was unsuccessful" please be advised that the applicant is an applicant pro se and has no attorney in the matter. The applicant's contact number of 408-365-1170 registered no call from Virginia per the caller ID. Applicant respectfully request the contact information be reexamined for accuracy as the correct contact should be Mark Zamoyski, applicant pro se, at 408-365-1170.

In response to the Election/Restriction requirement, applicant is not certain what the Examiner considers a species as Examiner does not distinctly define what Examiner categorizes as a species. In the absence of a definition provided in the office action, the dictionary definition of a species is "a class of individuals having some common characteristics or qualities". As such, trichothecenes are a species of molecules in that they all possess a central sesquiterpene epoxide structure. Functionally, the sesquiterpene epoxide structure binds to ribosomes and as such trichothecenes posses the quality of inhibiting protein synthesis in eucaryotic cells. Individual molecules in the species have different side chains that can enhance protein synthesis inhibition, however all of the individual molecules in the species share the common characteristic of possessing the central sesquiterpene epoxide structure and share the quality of inhibiting protein synthesis in eucaryotic cells.

In three prior applications related to medicinal use of trichothecenes that were granted to applicant, the claims included the use of trichothecene, a mixture of trichothecenes, or a sub unit or fragment of trichothecene that still possessed the biological activity of inhibiting protein synthesis (i.e. U.S. Patent 6,342,520, U.S. Patent 6,346,251 and U.S. Patent 6,355,251). No election/restriction was required

during the prosecution of those applications which either meant they were viewed as a species of molecules (as per the dictionary definition as disclosed above) or meant the molecules were not patentably distinct as they were obvious variants.

The change in treatment over prior applications/patents, coupled with the absence of guidance in the office action as to what Examiner defines as a species, makes it difficult for applicant to understand with certainty as to what applicant is being asked to restrict the claims to. In a good faith effort to try to comply with the office action under those circumstances, applicant will respond under several possible interpretations.

According to the first paragraph of the office action: "Claims 1 is generic to a plurality of disclosed patentably distinct species comprising a trichothecenes, a mixture of trichothecenes or a subunit of trichothecene, or fragment or subunit of a sesquiterpene epoxide. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed."

Restriction / Election A: Under the interpretation that each of the categories listed in paragraph 1 by the Examiner is a species (i.e. 1) trichothecenes, a mixture of trichothecenes, or 2) a subunit of trichothecene or 3) a sub unit of a sesquiterpene epoxide), applicant respectfully elects to restrict examination to the first category: Trichothecenes, a mixture of trichothecenes

Paragraph 3 of the office action reads "A search of Registry discloses that "trichothecenes" is a class of compounds that includes 154 compounds".

This is also disclosed by applicant on page 5 of the specifications as well as that the 150+ compounds can be broken down into two broad classes: those that have only a sesquiterpene epoxide structure and those that have an additional macrocyclic ring (simple and macrocyclic trichothecenes respectively). Applicant provides reduction to practice examples using 2 simple trichothecenes and 2 macrocyclic trichothecenes, to demonstrate that either class could be used to achieve the therapeutic benefit covered by the application (Figs. 1A, 1B, 2A, 2B, Tables 1,2,3 on page 13, and detailed examples on pages 18 - 21). Hence, if a species is defined as 1) simple trichothecenes or 2) macrocyclic trichothecenes, both are covered by in the specification section of the application.

Applicant also discloses in the specifications that simple trichothecenes may be further broken down into one of 3 groups (i.e. Group A, B, and C) based on side chains and provides representative formulas on page 6 of the application. The two simple trichothecenes used in the reduction to practice example were both chosen from Group A because of their potency and large safety margin, however any of the other simple trichothecenes could be used. To clarify this point, applicant has attached Exhibit A: Comparative PSR Potency and Safety for Representative Trichothecenes (on page 6 of 6 of this response).

Exhibit A discloses that all trichothecene classes and sub groups are capable of protein synthesis restriction (Column labeled ID 50). Exhibit A also discloses that a high PSR lung dose (e.g. 3 times the ID 50) is thousands of times safer than the LD 50 (i.e. based on IV LD 50 where available, otherwise IP LD 50 was used). As a point of reference, in animal models, at 5 times smaller than the LD 50 , no mortality is observed. Ten times smaller than LD 50 is a considered good safety margin, as this is the margin of safety used by certain non prescription drugs such as acetaminophen. In stark contrast, the safety of trichothecene lung doses is thousands of times smaller (i.e. last column on Exhibit A). Accordingly, any of the trichothecenes may be used as they are capable of protein synthesis restriction and have a high level of safety.

Election / Restriction B: Under the interpretation that a species is one of the two classes of trichothecenes (i.e. Simple or Macrocyclic), applicant respectfully elects to restrict examination to the first category: Simple Trichothecenes.

Election / Restriction C: Under the interpretation that a species is one of the sub types of trichothecenes (i.e. Type A, Type B, Type C, or Macrocyclic), applicant respectfully elects to restrict examination to the first category: Type A trichothecenes.

Election / Restriction D: Under the interpretation that a species is one of the 150+ individual molecules, applicant respectfully elects to restrict examination to the trichothecene molecule DAS (diacetoxyscirpenol).

Traverse: Applicant respectfully request to traverse on the ground that the species are not patentably distinct as they are obvious variants. Based on the disclosures above and in the specifications, the species all possess a central sesquiterpenoid structure and are capable of protein synthesis restriction (PSR). As disclosed in the specifications, PSR is both immunosuppressive and an apoptotic cell cycle active cytotoxic. In COPD, the immune response causes both inflammation and mitogen production that results in the production of undesirable cell types such as smooth muscle cells and goblet cells. PSR would provide a novel dual mechanism of action against both inflammation and hyperproliferation of the undesirable cell populations in COPD. Since PSR is the functional mechanism, any of the species that are capable of restricting protein synthesis, including sub units or fragments of trichothecenes that sill possess the biological activity of inhibiting protein synthesis, could be used to achieve the novel therapeutic benefit disclosed under the application.

Claims: In a good faith effort to restrict the claims, and in the absence of clearly defined groups that are typically presented in election/restriction office actions, applicant has restricted the original claims to conform them to the text and scope of the claims as allowed under U.S. Patent 6,342,520, U.S. Patent 6,346,251 and U.S. Patent 6,355,251. Additionally, applicant has added claims 3, 4, and 5, each progressively more restrictive, in an attempt to provide viable claims under Election/Restriction interpretations B, C, and D above, respectively. The claims are on page 4 of this amendment.